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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/807,427	04/20/2001	Kazutoshi Yasunaga	P20934	6222
7055	7590	11/26/2004	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			ABEBE, DANIEL DEMELASH	
			ART UNIT	PAPER NUMBER
			2655	

DATE MAILED: 11/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/807,427	Applicant(s) YASUNAGA ET AL	
	Examiner Daniel D Abebe	Art Unit 2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 24-27 and 36-38 is/are rejected.
- 7) ☒ Claim(s) 16-23 and 28-35 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/20/2001</u> . | 6) <input type="checkbox"/> Other: ____ |

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DETAILED ACTION

Claim Objections

Claim 38 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim on claims 36 and 37. See MPEP § 608.01(n). Accordingly, the claim not been further treated on the merits.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 5, 6, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Itoh et al. (5,915,234).

As to claim 1, Itoh teaches a speech coder (Fig.1-4), comprising:

Synthesizer (104) for filtering an adaptive codebook vector (ex) stored in an adaptive codebook (105) and stochastic codebook (106), using lpc coefficients (aa) which are obtained from an input speech (100);

Gain calculating means (112) for computing the gains to be applied for the excitation vectors, where the difference between the synthesized and the input signal (116) is used (108) to search the vector that minimizes distortion;

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Parameter coding means, wherein the parameter coding means comprises lpc (vocal tract coefficient) adjusting means (126) for adjusting the coefficient based on the previous frame or subframe (Col.10, lines 28-60).

As to claims 3, 5 and 6, Itoh teaches the plurality of codebooks for generating the speech parameters.

Claim 13 is analogous to claim 1 and rejected by Itoh for the foregoing reasons.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh et al. (5,915,234) in view of Ojala et al. (6,202,045).

With respect to claim 2, Itoh doesn't explicitly teach where the adjusting is performed when the states of the previous sub frame are high or low. Ojala however, teaches a speech coding system where if the number of lpc coefficients in the first set of the current frame differs from the number in the first set of the preceding frame, then generating a second expanded or contracted set of lpc coefficients from the first set of lpc coefficients generated for the preceding frame, the second set containing a number of coefficients equal to the number of lpc coefficients in said first set of the current

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frame. It would have been obvious to one of ordinary skill in the art to combine the two arts for reducing the bit rate while generating a high quality speech.

Claims (7-12 and 14) are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshikiri et al. (6,704,702) and in view of Mccree (6,470,309).

As to claims 7-9, Oshikiri teaches a celp based speech coder (Fig.44-51), comprising:

Synthesizing means (907) for filtering an adaptive codebook vector stored in an adaptive codebook (928) and stochastic codebook (928), using lpc coefficients which are obtained from an input speech (921)

Gain calculating means (704) for computing the adaptive and stochastic gains to be applied for the excitation vectors, where the distortion between the synthesized and the input signal is calculated (911);

Parameter coding means (924), for encoding the resulted parameter;
Pitch analyzing means for performing pitch analysis of a plurality of frames by determining a search range for the pitch lag/pitch period (930). Oshikiri doesn't explicitly teach finding a correlation value to estimate the pitch. Mccree, however, teaches a speech coding comprising a sub-frame based correlation method for obtaining the pitch, including determining the range for pitch lag (abstract; Fig.1). It would have been obvious to one of ordinary skill in the art to combine the two arts for reducing the pitch prediction error by reliably estimating the pitch value.

As to claims 10-12, Mccree teaches where a speech signal of each frame is further divided into subframes, the predictive pitch period of a subframe in the current

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frame is obtained by using the pitch periods of at least two frames of the current frame to be encoded and past and future frames with respect to the current frame, and the search range for subframes in the current frame is determined by using the predictive pitch period for searching around it (Col.3, lines 45-62).

Claim 14 is analogous to claim 7 and rejected by Oshikiri in view of Mccree for the foregoing reasons.

Claims 15, 24-27 and 36-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Haggvist et al. (5,327,519).

As to claims 15, 24-27 and 36-37 Haggvist teaches a method for synthesizing a block of original speech signal in a speech coder, the method comprising the step of applying an optimal excitation vector to a first synthesizer branch of the coder, to produce a block of synthesized digital speech, characterized in that the optimal excitation vector comprises a first set of a predetermined number of pulse patterns selected from a codebook of the coder, the codebook comprising a second set of pulse patterns, the selected pulse patterns having a selected orientation and a predetermined delay with respect to the starting point of the excitation vector (abstract; Fig.5c).

Allowable Subject Matter

Claims 16-23 and 28-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel D Abebe whose telephone number is 703-308-5543. The examiner can normally be reached on monday-friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 703-305-4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Abebe Primary Examiner A.U. 2655

A handwritten signature in black ink, appearing to read 'Dan Abebe', with a stylized, flowing script.

November 22, 2004